The solar water heater installation instructions "user manual"

The first part: installation instructions

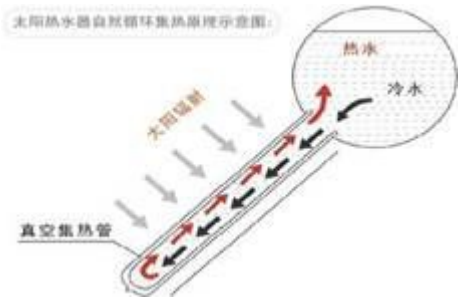
Ⅰ, Household structure and working principle of the solar water heater

1.The household solar water heater working principle

Vacuum-tube solar water heaters mainly have three parts: storage water tank, thermal collectors (vacuum tube), the support. The appearance of the tank is a cylindrical object, with multiple socket holes ,and the box body is made up by two-layer metal material with clipped temperature layer inside and outside, whose function is saving water, Vacuum tube ,like an elongated thermal jug inner tank, is covered and suited by a big and small one with two glass tube. Its outer layer is transparent; lining layer is selective absorbing coating, sparing the air into vacuum between the tube inside and outside. It is the core of the solar water heater, to maximize the absorption of solar radiation and the heat energy; Bracket supports the whole solar water heater, used for fixing storage tank and vacuum tube.

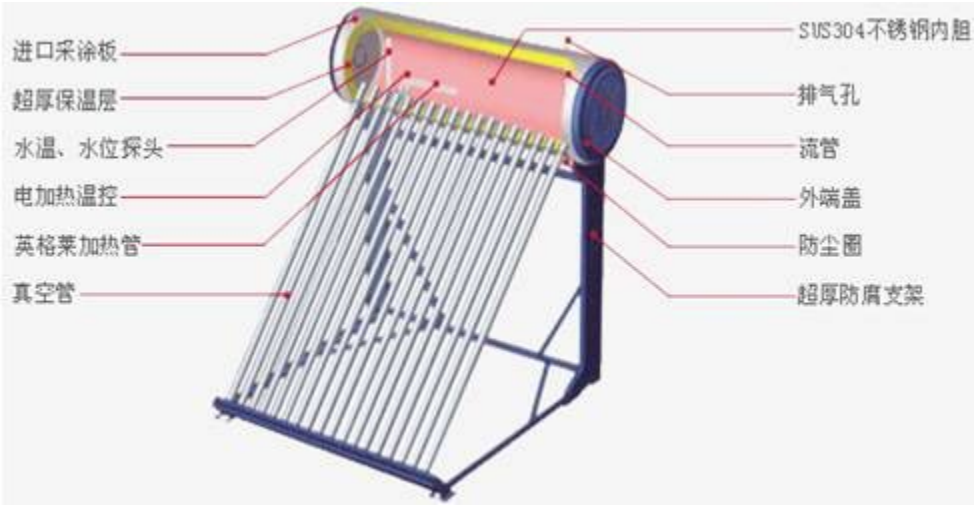
Solar energy is owing to the strong radiation of the sun thermonuclear fusion reaction, the essence of which is electromagnetic waves. As per the wavelength distribution according to the solar radiation energy, the working principle of the solar water heater is using selective absorbing coating, intensively absorbing solar radiation of visible light and near infrared. Water in the collector receives the sun radiation to heat and the temperature will rise. In the collector and the water tank, because different water temperature generates density difference, forming the natural convection, water of relatively-high temperature will constantly enter the heat preservation water tank.

（as pictures）



2. The structure and components of the solar water heater

（as picture）



Ⅱ，The installation instructions

1. Water heater should be installed where there is no shade, its main body facing the sun (due south or by west 10 degrees or so), and fixed tightly in order to avoid bad windy weather from blowing down the water heater;

2.Water heater’s main body assembling order: firstly assemble support frame, secondly install heat preservation water tank, and then install vacuum tube, finally install diffuse plate (grating);

3. When installing a vacuum tube, jam the tail support into the tail plate firstly, and then in the area of. the annular esrtuary wall of the vacuum collector tube painted some detergent such as lubricant, covered the loop of dustproof the shield and then aligned the vacuum tube axis with the tank vacuum tube holes, slowly rotating into the water box and then carefully screw on the back end. You should pay attention to install lateral two vacuum tubes of the insulation bucket firstly, adjust tha space between the vacuum tube and water tank hole around evenly, and then install the rest of the vacuum tube

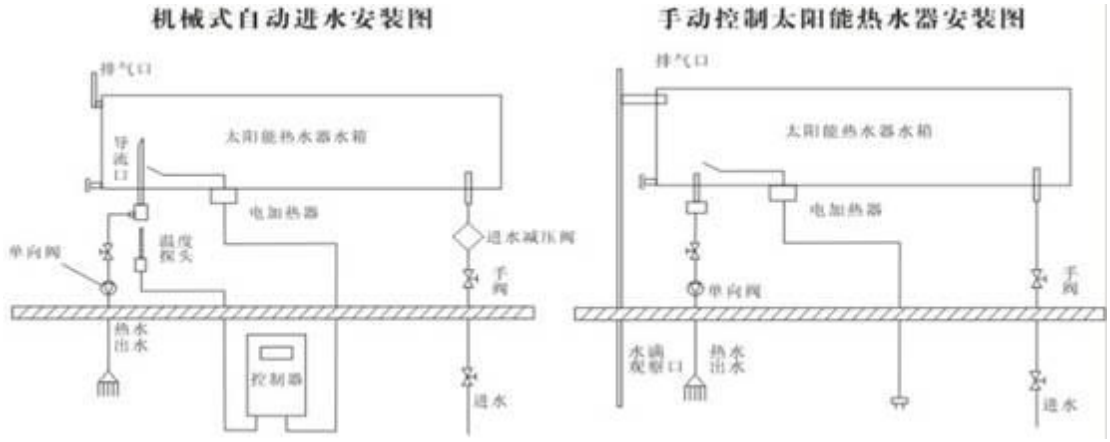
4.Piping installation can be made after water heater body is assembled, there are five holes on both sides of the heat preservation water tank cover, and you can choose installation ways according to actual needs flexibly , but no matter what kind of installation, vent, ventilation, and overflow must be properly installed, lest of bloating or deflating the water tank because of poor ventilation;

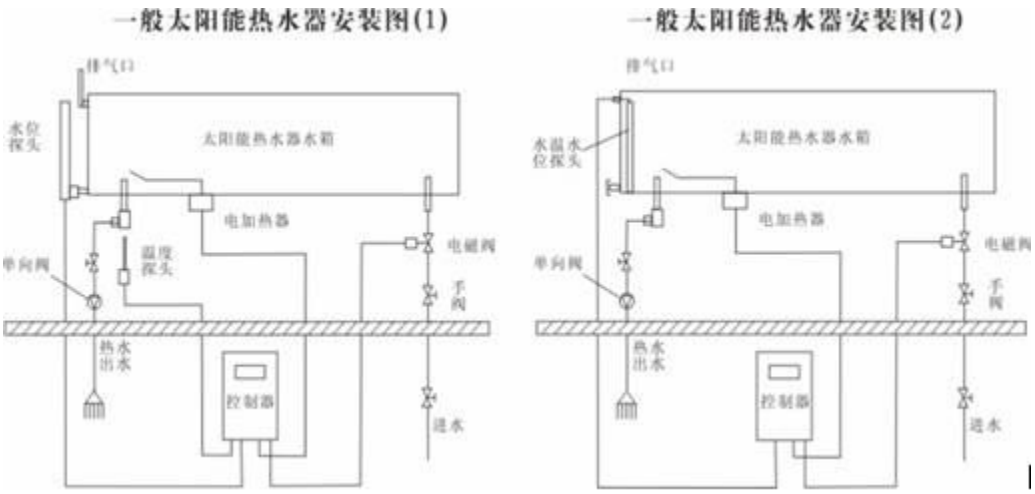
5. It is forbidden to fill vacuum tube with cold water suddenly after anhydrous air drying in the sun, in case the vacuum tube will crack suddenly at high temperature in cold water. If it is installed in the hot sun, you can use sun shade or fill vacuum tube with enough water, and fill the water tank with water immediately after complete-installation. It is suggested that the time of filling with water be at night or in the morning, when the temperature is not too high;

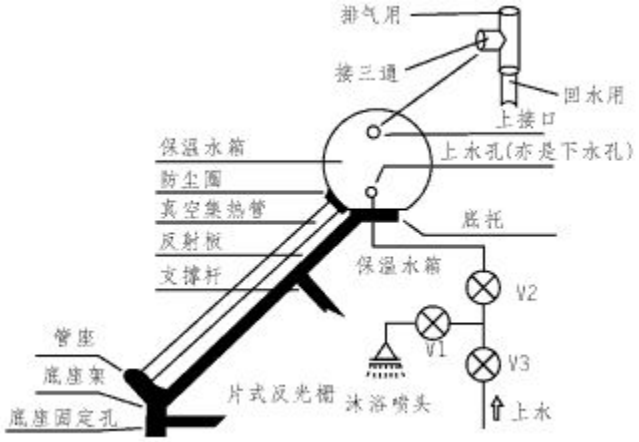
6. In order to ensure that in the cold winter, it can be in normal use, we recommend plumbing pipe should adopt insulation or emptying measures, in case of pipeline frozen and frosted to crack and affect its use;

7. You should not damage the beautiful appearance of the buildings when decorating the pipeline, and the sewer needs to be fixed tightly with buildings

Ⅲ, common installation methods







Application method

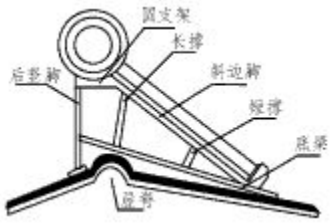
1. For the first time using or reusing after empty deactivation, if no water in the area, the drying temperature of the pipe can reach 250 ℃ or so. So you can not immediately fill cold water, and should choose to do that in the morning or at night, or use the mask to cover

the tubes, making it filled with water when the temperature is lower, in order to avoid the tubes from being burst.

2. Please match " a valve with pipe and spraying according to "installation plan, at the same time open the V2 and V3, use V3 to adjust water temperature, the shower once set, no longer shut down, and close the V1, V2 when it is paused, reopen them when you use it again. When you use the heater again, opening V1, V2 ， you can quickly get the appropriate water temperature, and finally close all the valves after you use it.

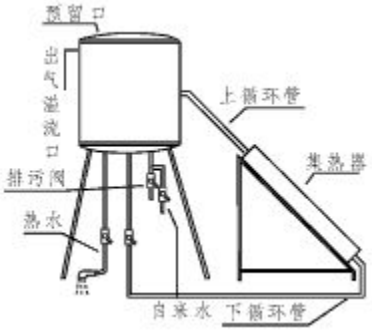
Note: Libang new type water heaters all adopt underneath type to outlet water, please check it when installing.

Incline- roof type water heater installation



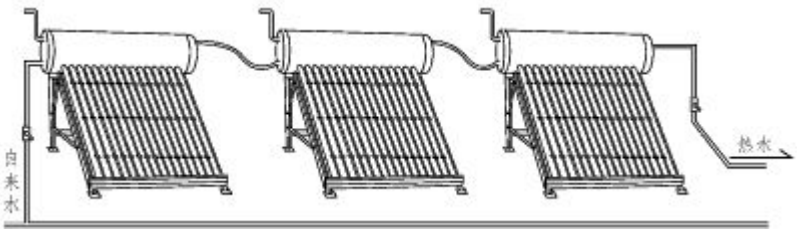
Leap to install at around 30 ° slope, low ridge of the roof; Adjustable to adapt to the installation in slope around 60 °, high ridge of the roof; Leap-type and adjustable-type can be mutual conversion, can tear open outfit into a roof mounted

Luxurious villa type water heater installation



Install valve gas is not allowed to be installed on the overflow mouth, in case of congestion vent; Reserved for automatic control device, when not installing control devices, you can block the mouth to reduce the heat dissipation.

series connection



Series connection is suitable for the requirements for higher water temperature, but the hot water capacity is relatively smaller compared with parallel link; It can be flexibly combined in series or in parallel connection according to need in practice.

Ⅳ, Household solar water heaters' the main technical parameters

product series	Libang solar water heater	Eastern-light solar water heater		note
Heat preservation tank inner diameter	360mm			diameter
Heat preservation tank outer diameter	470mm			diameter
Collector specifications	58-1800			Tube diameter and length
Collector number (hole)	20、24、30、36、42			approved products
Water capacity (L)	155、185、230、270、310			about1：8
Water temperature (℃)	45-90			High heat absorption temperature for days
Inner barrel material	304-2B stainless steel			national standard
outer barrel material	Color steel	stainless steel	Color steel	national standard
thermal insulation	polyurethane (PU)			national standard

material				
support material	galvanized sheet	stainless steel	aluminum alloy	stainless steel bolt
Water inlet and outlet caliber	20#			Stainless steel materials
Electrical Heating Power（W）	1500/2000/2500			stainless steel
The water tank rated pressure	0.0KP			national standard

The second part: the instructions for use

Ⅰ, Domestic solar water heater using method and preservation and maintenance

1. For the first time watering, it is usually filled with water directly after finishing the installation, if in any hot weather, you cannot fill with water timely when it is installed, you can choose to inlet cold water when the sun has set down for half an hour or in the morning when the temperature is not high

2.If it is manual filling, after the cold water is full, the water will flow out from the overflow pipe, close the water-filling switch at this time.

3. You should adjust water temperature of the bath according to the seasons., water temperature and bathing habit, Firstly, open the cold water switch and mix water valve, then slowly turn to hot water switch, adjust the mix water valve until the water temperature is suitable for bathing, to prevent too high hot water temperature from scalding the skin.

4. In winter, when the room temperature is low, you can use bath bully or warm air blower, etc. to improve the room temperature.

5. In summer , you should water immediately in the day after using hot water, , or water half an hour after sunset. Avoid the sun radiation intensity is too high to steam to dry the water inside solar glass vacuum, and generate 300-degree-high temperature and the risk of cracking the pipe when water all of a sudden. In the conditions of water consumption is less, please use the sun shade to cover glass vacuum heat-collecting tube to reduce heat absorption as much as possible

6. In spring, autumn, winter, if you don’t use the solar water heater for a long time, it is recommended to use sun shade to cover; When used, it must be watered in half an hour after sunset.

7.Avoid solar water heater empty in the sunshine for a long time , Solar air drying can cause ultra high temperature , may affect the performance and silicone ring vacuum tube-a and water temperature, water level sensor life

8. Must be checked before use electric heating leakage protector. When water temperature of the solar heat preservation water tank is less than 50%, do not forcibly boot electric heating device. Cut off the power supply after heating.

9. Some type of measurement and control instrument have leakage protection function, the user just press the add hot keys closed when water heating, heating pattern, can rest assured to use , do not have to unplug the power plug.

10. To avoid wrong operation solar controller, power supply is not normal and control failure caused by unexpected problems, such as long time overflow, solenoid valve and the solar energy water heater must be installed in water leakage does not occur to indoor or injection caused by accident, if equipped with return pipe, must connect reliable drainage pipeline, and must be installed and reliable lightning protection measures, pay attention to the lightning protection. When lightning occurs, should disconnect the power supply in time, stop the use of solar energy, in the typhoon weather conditions, should maintain a state of solar heat preservation water tank filled with water, avoid the typhoon blown over the solar water heater. Pay attention to personal safety.

11. If installed solar controller, please don not let water directly rush drench measurement and control instrument; Check whether all kinds of wires are reliable connection

12. It is strictly prohibited to use electric auxiliary heating and heating pipe while taking a shower

Ⅱ, Simple method of judging vacuum tube whether it is broken or not

For convenience of the users to identify whether the vacuum tube can continue to use, here mentioned some simple identification method for reference.

1. Visual inspection at the bottom of the vacuum tube-a silver mirror is white transparent, if is white, the vacuum tube-a has a flat, though still have heat-absorbing function, but has lost heat preservation function

2..Empty vacuum tube. the inside the outer wall of pipe is black or dark blue coating commonly, if the coating area, or a color and other vacuum tube color difference obvious, show that the vacuum tube-a heat-absorbing function have degenerated, collection efficiency declined obviously.

3.Empty thermal collectors. the multiple for double borosilicate glass, the middle section is vacuum layer, if it is found that vacuum layer appear obvious Water seepage or water , the vacuum tube inner pipe has cracks.

4 . If it is found that the borosilicate glass surface appear large nodules, suggesting that vacuum tube-a hair germ tube itself exists

Solar energy water heater common faults and solutions

fault phenomenon	reason analysis	elimination methods
Water problems	Municipal water pressure on the low side, or have cut off the water supply	Water when the water trough, or waiting for the water supply 。
	The water pipe culvert freeze or frost crack	Dredge pipe and insulation measures
	Vacuum tube-a damaged	Replace the evacuated solar collector tubes
	Heat preservation water tank leaking	The reference for heat preservation water tank leakage treatment method
	Control instrument failure, or the electromagnetic valve failure	Repair or replacement spare parts
Water tank leaking	Vacuum sealing ring misplace	Pull out and reset the vacuum tube
	Sealing ring damage	Replace the silicone ring
	Sealing ring surrounded by clutter	Removing debris
	Electric heating joint sealing is lax	Reconnect t, pay attention to proper tightness
	no water in the tank	water again
	Tube blocking or freezing, valve failure	Dredge pipe, replace the valve

Water outlet problem	Down comer has anti slope phenomenon	Correct the piping layout. Users can try the following solution: select a water mix water valve, the valve adjustment to the state of mixing cold and hot, plug the outlet, the use of municipal water pipe of the air pressure to the water tank, can be repeated several times.
	Control system failure	Repair or replace the controller
The temperature is low	Install the angular deviation is too big	Correct installation Angle
	There is a shelter near panels	Change the installation environment
	The bad weather, the radiation energy is insufficient	Using photoelectric complementary auxiliary heating
	Vacuum tube surface dust cover	Vacuum tube surface dust cleaning
	Poor water quality in the vacuum tube .the silt or structure	Clean up the vacuum tube
	Not to install the necessary check valve in accordance with the requirements, resulting in the loss of hot water	Install the check valve
	Pipe insulation freedom does not reach the designated position or falling water tank insulation effect	To strengthen the heat preservation measures

	The control system failure caused by keep adding water , hot water overflow	Repair or replacement controller
Rated pressure is low	Solar water tank with water and the height difference is less than three meters	Increase water pipe diameter or booster pump installation
The cold water with hot water before release more	Piping layout is too long	To minimize the pipe length or install hot water circulation system
Electric heating device does not work	Control system failure	Repair or replacement controller
	Solar thermal insulation water tank temperature over70 degrees	Electric heating protect themselves preset program, do not need to repair.
	Damage of electric heating tube	Replace the electric heating tube

The third part： the after-sales service

Ⅰ，Unified installation services policy

1. Free consultation, free design, delivery, installation, maintenance fee together with solar energy, no longer charge separately, unless the customer requests installation all by themselves;

2. In the installation process, in addition to a complete set of accessories of the company products, (insulation cotton, water pipes, etc.) can be provided by the distribution or service outlets, and charge according to the actual use ;

3. If the local dealer improperly install, all losses shall be borne by the local distributor, and for the damage to the company brand reputation caused by them, the company shall have the right to pursue its responsibility;

4. Due to the company's product quality , in the conditions that local dealers don’t know the real situations, cause the increased amount of installation, maintenance, or economic loss to the local dealers, once the company quality management department for product quality issues identified, confirmed that the economic loss and the dealers on solid ground after check, the company shall bear the corresponding loss ;

5. For example, the company's products have the unexpected quality problem , the local distributor donnot inform the company that and intentionally sell them, direct economic losses caused by the installation and maintenance , shall be borne by the local distributor, and the company will find out corresponding punishments to the dealer.

Ⅱ. The warranty service policies

1. Provide users with the warranty service of "3 guarantees" indicated on the product warranty card ;

2. Products complied with the regulated range of "3 guarantees" of should be in free maintenance , the products out of the time limit should be rationally charged from the user, without non-regular fees

3. For products which have been repaired, the warranty period of the same part is 3 months starting from the repairing date, during this period the maintenance , such as repeated failures, should be free to serve the user.

4. If the user cannot provide warranty card and the invoice, according to the machine delivery time, its purchase date is dated back to three months later to figure .

Ⅲ, Warranty Scope

1.The free warranty period of solar water heater host (tank vacuum tube and stent) lasts for three years since the date of the purchase. The sales agents or the service providers will provide free service for the malfunction problem caused by the product quality during the warranty period .

2. The free warranty period of the auxiliary functions of the solar water heater parts (temperature controller, sensor solenoid valve, electric heating tube, automatic water valve, vice water tank) last for one year since the date of its purchasing.

3.The free warranty period of the Piping system accessories (such as the pipe, brass fitting, shower, valves, etc.) lasts one year since the date of its purchasing.

4.Warranty certificate: users could handle product warranty card by virtue of purchase in voice or payment receipt and product warranty card if the malfunction problems of the solar products occur during the warranty period and the product data must be consistent with the product information on warranty card (purchase date must fill in the cost in the invoice and the product warranty card). If there is no invoice or payment receipt warranty card, the warranty period could be calculated according to the product data; If neither of the above exists, the product will be regarded as over warranty period, which could not enjoy free warranty service, but the dealer or service providers should provide paid service for the users and charge according to the rules of the company.

Ⅳ, Non-Warranty Scope

1.Damage caused by improper operation, maintenance or storage;

2.Damage caused by self-transportation, dismantlement, displacement or disassembled by non-special units;

3.No warranty card and valid invoice or purchase voucher, and could not prove that it belongs to the repair period;

4.Warranty card discrepancy or altered;

5.Damage caused by irresistible natural disasters and other factors ;

6.Products over the expiration of the repair period.

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